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The Maryland Fruit Grower

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Edited by the Secretary, A. F. Vierheller, Extension Horticulturist

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DAVID MAURICE WERTZ

On March 19th, David Maurice Wertz passed away suddenly at his home in Waynesboro, Pennsylvania. His death has removed a colorful figure in the fruit growing industry of this section. Mr. Wertz was a member of many Horticultural Societies and had a deep interest in any new developments in fruit growing. He was closely identified with the business and industrial interests of his city. He will be sadly missed by his many friends in the Cumberland-Shenandoah area where his presence and comments seemed a natural part of any meeting of fruit growers.

POLLINATION

Out in the Northwest, the growers are doing some hand-pollinating to control their apple fruit-set. Possibly there are some growers in the Cumberland-Shenandoah section who would be interested in trying some hand-pollination on some blocks of trees where set is uncertain.

Mr. Leo C. Antles, Box 220, Wenatchee, Washington, has developed a method of collecting apple pollen, and has such pollen for sale. It may be shipped parcel post to any part of the country, and is so controlled that the pollen is viable when received by the grower.

Mr. Antles is interested in having some reliable individual or drug company handle the pollen in this section. Since no such dealer has been located, any growers who would like to try some of the pollen may write directly to Mr. Antles for prices, particulars, etc.

MORE ABOUT POLLINATION

Pollination is a vital thing in any orchard. We may fertilize, cultivate, prune, worry about the weather and all such things, but the amount of fruit at harvest depends upon the fruit that sets at blossom time, and fruit set depends upon the amount and kind of pollen that reaches the blossom pistil.

We have come a long way in knowing something about which varieties will set from their own pollen, and which varieties are good pollenizers for certain other varieties that are peculiarly uncertain in setting fruit. With all these facts, we still find that certain varieties will vary in set, under the same conditions, year after year.

Back in 1931, E. L. Overholzer and F. L. Overley of Washington State Experiment Station published some material on pollination that is of interest. Their work showed the pollinating value of some of the new varieties. They reviewed all of the pollination work over the country, and showed how some sections reported certain varieties as good pollenizers, while other sections found these same varieties to be poor pollenizers on the same variety. In

our section, Delicious is an uncertain variety in fruit-set. We feel that Golden Delicious is a good pollenizer for it, but even this condition varies. In the following Tables, published by Overholzer and Overley, note the variation in Golden Delicious as a pollenizer. The Tables are not given in full, and under the caption "Years" each year's trial is a separate year, and shows the variation in set where the same pollenizer is used. The Tables cover some pollination trials with Delicious and two of the red sports of Delicious and show how pollination may vary widely from year to year. For a crop, the pollination should be at least 10%.

TABLE 1—POLLINATION RESPONSE OF DELICIOUS

Variety pollen placed on Delicious blossoms	No. Years Trial	Av. % Fruit Set
Arkansas Black	1	21.7
Black Ben	1	23.9
Blackjon	1	16.1
Delicious (selfed)	2	1.0
Golden Delicious	1	3.2
Golden Delicious	1	23.9
Golden Delicious	1	7.9
Grimes	1	23.5
Jonathan	2	14.1
King David	2	17.1
McIntosh	2	20.5
Red Rome	2	11.7
Red Stayman	1	00.0
Red Winesap	2	5.2
Richared	4	2.0
Rome	2	17.3
Starking	2	0.1
Winesap	2	0.8
Winter Banana	2	20.7
Yellow Newtown	2	14.4
Normal Count	2	11.0

TABLE 2—POLLINATION RESPONSE OF RICHARED DELICIOUS

Variety pollen placed on Richared blossoms	No. Years Trial	Av. % Fruit Set
Blackjon	1	1.9
Delicious	2	0.7
Golden Delicious	2	5.6
King David	1	17.0
McIntosh	2	18.1
Richared (selfed)	4	1.7
Red Rome	2	3.5
Rome	2	20.8
Starking	2	00.0
Winter Banana	1	45.0
Yellow Newtown	1	64.0
Yellow Newtown	2	2.0
Normal Count	2	6.6

TABLE 3—POLLINATION RESPONSE OF STARKING

Variety pollen placed on Starking blossoms	No. Years Trial	Av. % Fruit Set
Blackjon	1	12.32
Delicious	2	00.0
Golden Delicious	1	14.95
Starking	2	00.0
Winter Pearmain	1	20.14
Normal Count	1	18.83

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The Tables were taken from a paper, "Pollination of Certain Apple Bud Sports in North Central Washington," E. L. Overholzer and F. L. Overley, Washington State Horticultural Society Proceedings, 1931. Some work is now in progress at Maryland Agricultural Experiment Station trying to determine what factors in tree vigor and condition may cause pollination variation in Delicious apple.

HOW ABOUT BEES?

Growers who need to rent or buy bees for pollination may write Mr. George Abrams, Department of Entomology, University of Maryland, College Park, for reference to reliable sources of bees.

COLD STORAGE HOLDINGS—APPLES

The Agricultural Marketing Service of U. S. Department of Agriculture reports the following cold storage report, released March 12, 1940:

	Mar. 1 5-Yr. Av.	Mar. 1 1939	Feby. 1 1940	Mar. 1 1940
Barrels	239,000	81,000	157,000	128,000
Western Box	7,990,000	7,959,000	8,214,000	6,278,000
Eastern Box	Previously reported with "bushel baskets"		5,711,00	3,726,000
Bushel Baskets	7,061,000	7,200,000	5,910,000	4,009,000
Total Bushels	15,768,000	15,402,000	20,306,000	14,397,000

WHAT'S THIS?

Mr. C. L. Burkholder of Purdue Experiment Station, writes that he has just read the following statement which he passes on for what it is worth: "God gave us two ends; one to sit on and one to think with. A man's success depends upon which end he uses most." Just sit down and figure it out.

THINGS ARE HAPPENING

After the rush of the Federal Surplus Commodity Corporation apple purchases was over, the growers of Pennsylvania, Maryland and the Virginias who had served on the state purchasing committees met in Washington, and a permanent committee composed of these state committees was set up. It is known as the Apple Industries Committee. This committee has had one real snappy meeting in Hagerstown, and will meet in Martinsburg, W. Va., soon to continue with plans for attacking and solving several questions of vital interest to the apple growers of this section. Among the main topics now under discussion are: Removal of trees that for any reason are not profitable; setting up a list of varieties to be recommended for future maintenance or planting; getting down to one standard apple box for the section; and figuring out some plan of handling the cull problem. At the Martinsburg meeting, it is hoped that some definite recommendations may be worked out, and then a delegate from each state will go to a regional meeting at Rochester, N. Y., where it is planned to work the state recom-

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mendations into some definite plan for the region.

We all remember Appalachian Apples, Inc., and know that they have done a fine job with a little money. This organization is affiliated with National Apple Institute, which really meshes all apple advertising plans of the country into an organization. National Apple Institute will meet in Rochester, N. Y., on April 17 and 18, and the Apple Industries Committee will meet right on the end of that meeting, on April 18 and 19.

The real encouraging part of this whole affair is that it is grower-organized, and indicates that the apple industry is getting ready to declare war on some questions that have been in our hair for a long time. We can't expect these delegates to come back with all the answers, but it is expected that the hides will be torn off a lot of pesky problems and will be tacked on the barn door to dry when the meetings are over.

FREEZE INJURY TO PEACHES

From reports issued by Agricultural Marketing Service, U. S. Department of Agriculture, and from letters received, the January freeze has practically ruined the peach crop prospects in Ohio, Indiana, Illinois, Missouri, southwestern Michigan and northwest Arkansas. The main injury was done to buds and luckily not so many sections report tree damage. The Southern States report only slight damage and Georgia seems to have rather heavy bud-set on Elberta, with lighter prospects on early varieties. In southern Pennsylvania, Virginia and Maryland, the injury has been very slight, if at all. However, some portions of Virginia had some injury and in cases, it is reported that certain varieties of apples have had some bud injury. We regret these losses suffered by the growers of those sections affected and hope that at fruit-set the reported losses will not prove so severe. A late report from Tennessee indicates that the peach crop in that State has suffered from severe freeze with varying degrees of injury even to wood injury in some sections. In the North Carolina Sandhill section, some injury is reported, and in some cases causing wood injury to trees 1 to 4 years old.

VAGABOND PACKAGES

In Tennessee Horticulture, November, 1939, it is reported that near the door of an East Tennessee packing house, there were lying 17 used basket lids, 7 of which came from Virginia, 2 from Michigan, one each from Delaware, Pennsylvania, and South Carolina, and 4 bore only grade or variety stamp. All were dirty and weathered. Growers are going to use these second-hand baskets. That's their affair. Of course, there is danger of bringing insects into the orchard on such baskets. One Maryland orchard traced some serious Oriental fruit moth injury in an apple orchard almost with certainty to some used peach baskets that were stacked in an open packing house. Aside from that, it doesn't seem fair for the baskets of a good grower to be re-filled with inferior stuff. The buyer may know that a second-hand basket was used, but does the consumer know it? Surely some way should be found to compel the used-basket men to remove all marks from a basket or box before it is re-sold for use. It would seem that a revolving wire-brush would do the job quickly and thoroughly. This matter is in the hands of the growers.

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THAT CULL QUESTION

No matter how good the grower may be, he is always going to have some cull fruit. The more culls he produces, the higher his cost of production will be, because production efficiency and lowered cost is based upon the *high* yield of *good* fruit per acre or tree. We have attended horticultural society meeting, this season, and have read proceedings of other meetings and the cull apple has surely been given "the works." It is now in the same class with the scrub bull—sired by misfortune, and damned by everybody. It is the bad boy of fruit growing, and a problem child, at that. Nobody seems to know what ought to be done with it, or about it. Before the problem is solved, it will require a lot of courage, and full grower-cooperation and no matter what is done, there will be a lot of headaches, hard feeling and anger aroused. It appears though, that the growers of some States are getting sufficiently "worked up" to try something. Virginia is making a start. At the last meeting of the Maryland State Horticultural Society, the problem was discussed to some extent, and a resolution was passed stating that "this Society is in favor of joining in some effective plan regarding the cull problem," and also empowering the President to appoint a committee of growers to meet with similar committees from Pennsylvania, Virginia and West Virginia, if these States desired to appoint such committees and call a meeting for the purpose.

What's new in the cull situation? Well, the most astounding news was that found in October, 1939, "Virginia Fruit" where a grower reported that truckers told him that they were being given culls free of charge to haul them to market in order to help clean out the packing house cull bins. In reporting on National Apple Week, Mr. Truman Nold of National Apple Institute states, "There has been but one common complaint. That concerns the very poor quality of apples displayed in some places. The grocers complain that they are helpless while growers are so anxious to work off their low-grade apples before offering good stock. The growers complain that good apples can't be expected to move in stores clogged with CULLS the public doesn't want. We aren't sure we know the answer, but have noticed that whenever a committee of growers can sit down with representatives of the retailers, they are usually able to work out an improvement."

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The cull apple question isn't one that affects just the Cumberland-Shenandoah section. It is a general problem. The Northwest growers solved their cull problem right quick, by simply keeping the culls at home, because distance to market didn't allow cull shipments. Then the culls that began to slip into the local markets were outlawed, and if found by inspectors, it is reported that the fruit was not only condemned but sprayed with kerosene to prevent its possible sale. That's rough treatment, but those growers out there decided that as long as such stuff was getting into fresh fruit markets, their good stuff was side-tracked or at least sales were lowered.

From New England, we hear more opinions about the cull apple. Mr. W. H. Darrow, a Vermont grower, in a letter published in the Rural New Yorker, January 27, 1940, described the changes in the McIntosh market as regards color, and how the trade is calling for more and more color. He described the Vermont apple grades, stating that they were set, but open to improvement, if growers' organizations strongly advocated changes, but the changes must be up, not down. He advocated U. S. grades, and compulsory enforcement of such grades as a remedy for some marketing ills. One part of the letter is worth reprinting, and here it is:

"There is one other question which might well be raised whenever apple grades are discussed and that is the question of what to do with the cull, or the undergrade apple. It is a most important question and one that should receive much consideration and study in the next few years. I believe the apple industry of this country would be in a much healthier condition than it is at the present time if all growers were required to keep all their apples below U. S. grade off the fresh fruit market. This is a strong statement and such a requirement would probably be impossible to accomplish in the near future. However, suppose that we start with the proposition

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that all apples below U. S. Utility Grade must be kept off the fresh fruit market. Government experts have estimated that over 11 per cent of the 1939 apple crop was below utility grade. If such a requirement could have been put into effect this season, it would have meant that between 11 and 12 million bushels of apples would have been removed from the fresh fruit market, or more than enough to make up for the loss in our apple exports due to the war. The next step would be to keep the Utility Grade off the market. The quantity of Utility Grade produced this year has been estimated at between 9 and 10 million bushels. Add these to the bushels below Utility Grade and the total is about 21 million bushels. If these 21 million bushels had been kept off the fresh fruit market this year, it would have reduced the crop from a little over 100 million bushels to about 79 million bushels.

Is there a fruit grower who would not have been willing to have dumped his Utility Grade, and poorer, if he could have been assured of, say 25 cents per bushel more on the balance of his crop? Just figure it out for your own crop and the result may surprise you.

I believe two of the great problems facing the Northeastern apple grower today are: 1. To place on all the general markets in the area a uniform, honest pack which is as good or better than the U. S. grade as marked. 2. To keep all the poorer grades of apples off the fresh fruit market. If and when these two problems are solved, I believe the apple industry will be in a much healthier condition than it is at the present time."

So the cull apple problem isn't localized, nor is it new. Back in the "good old days" of apple growing, there were worms and diseases, but not as many as we have now. Some of the old illustrations of apple varieties even showed disease spots, as a part of the characteristic of the variety. Grandpa (at least some grandpas) recognized culls, and partly solved the problem by running a few layers of apples into the barrel, then inserting a generous piece of stove-pipe into the middle of the barrel, then filling apples around the stove-pipe, filling the stove-pipe with culls, withdrawing the pipe, leaving a nice core of culls, then filling the rest of the barrel with good apples. That was before the days of inspectors, but even at that no inspector would have found the culls unless the barrel was dumped. The consumer probably figured that all apples couldn't be good, anyway, and accepted the bad apples as a part of the plague which Providence visited upon men for their misdeeds.

The public likes good apples. At the recent Fruit Exhibit in Baltimore, many people couldn't believe that Maryland grew such fine fruit. One lady asked, "Where do you keep it? I never see anything like this in market." People will rave about good fruit, and they rave and snort over poor fruit. That's a great part of our trouble with apple sales. Some wit once said, "Never owe a poor man or kiss a homely girl, because they both go around talking about it." Possibly he should have added, "and never sell anybody any bad apples," for we have heard plenty of talk about that. Of course, we could be frank about poor-grade apples, and maybe the purchasers would be satisfied. The New York State Fruit News, published by New York State Horticultural Society printed a story entitled "No Apples Included," telling of an actual 2-column, 6-inch ad in Middleburgh, N. Y. News, inserted by Kilts' Market, which listed among other things, roasting chickens, head cheese, pork sausage, etc. Heading the ad was this advice to customers: "This stuff ain't so hot. But we have it, and we're getting tired of

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Bonum	M. B. Twig	Summer Yellow Delicious
Cortland	Milton	Sweet Paradise
Delicious	New Red Delicious	Transcendent Crab
Early Harvest	New Red Duchess	Turley
Fall Pippin	New Red Jonathan	Virginia Beauty
Grimes Golden	New Red Rome	Winesap
Hyslop Crab	New Red Stayman	Winter Banana
Jonathan	N. W. Greening	Yellow Delicious
Lady	Paragon	Yellow Transparent
Liveland Raspberry	Red June	York Imperial
Lodi	Rome Beauty	YORKING

PEACH

Alton	Golden Jubilee	Mikado
Belle of Georgia	Greensboro	Red Bird
Brackett	Hale	Rochester
Carman	Hale Haven	Salway
Champion	Heath Cling	Slappy
Crawford's Early	Hiley	South Haven
Crawford's Late	Indian	Valiant
Early Elberta	Late Elberta	Vedette
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looking at it. You probably won't be able to eat any of it. But we sure will express our appreciation if you buy some of this junk, and make yourself a penny richer."

Seriously, though, this cull problem is a mill-stone around the neck of the apple industry. We will always have culls. Probably, some by-product outlets will be developed for some of them, and some will be a dead loss, but if we can just keep them in their proper channels, and give our better stuff a chance, we will have accomplished a real job. Every grower should think over the problem real seriously. The solution may mean some sacrifice. But if the cull problem is ever solved, it will have to come from the grower, working with his neighbors, his fellow-citizens, and finally such groups will have to combine with growers from other communities and other States.

THE WAR AND AMERICAN AGRICULTURE

We all hate war as a futile waste of human and natural resources. Since armies travel on their stomachs, the average American farmer is interested in what effect, good or bad, the present European war situation will have upon American agriculture. In a statement issued by Secretary of Agriculture, H. A. Wallace, on March 6, 1940, the following facts are reported:

"Agriculture on the whole is not profiting from the war. Exports of farm products are not increasing and are not likely to increase in the near future. Large groups of producers of important export crops have been cut off from normal world markets.

Certain fundamental factors in the situation stand out:

First, Great Britain and France are reserving their dollar purchasing power in this country to buy airplanes and other armaments which they cannot get elsewhere.

Second, the Allied blockade has effectively shut off exports to German-controlled territory.

Third, our trade with neutral European countries has been badly upset by war.

Imports of Great Britain and France are under complete governmental control. They have pooled their buying operations and are not bidding against each other on the world markets. Diplomatic strategy, economic necessity, and economic warfare govern buying operations. Great Britain has purchased the Australian and New Zealand wool clips; has arranged to take the entire Australian surplus of dried and canned fruits; has assured Canada an acceptable price for increased imports of cured pork; has made heavy bulk purchases of Egyptian cotton, and is negotiating similar purchases of Brazilian and other cottons.

For farm products, Great Britain and France are turning wherever possible to countries where they can obtain these commodities in exchange for their own goods or buy them with sterling or on credit. They also are attempting to buy up farm products which might otherwise go to Germany. For example, they have contracted for the Turkish and Greek tobacco and dried fruits that formerly went to Germany.

During the first 4 months of the war we have exported more industrial products than in the same 4 months of 1938, but less agricultural products, although the volume of agricultural exports has been held up by the large shipments of cotton. The volume of practically all other agricultural exports has declined since the war.

Here is the outlook for the important export crops:

Cotton—Allied belligerents and neutral European countries have been stocking up on our cotton. With the help of the export subsidy, sales of cotton for export in this marketing year now total more than 6 million bales, compared with actual exports of 3½ million bales last year. However, very little cotton is now being sold for export.

Wheat—Very little United States wheat is being sold abroad. Domestic prices have risen sharply since September and are now far above world prices, mainly because of drought and prospects for a short crop.

Pork Products—Great Britain limits by license imports of cured pork from the United States and Great Britain normally takes 71 percent of our cured pork exports. Neutrals are taking more of our pork and lard but not enough more to make up for the decline in purchases by the belligerents.

Tobacco—Great Britain has ceased buying our tobacco and temporarily, at least, has shut off one-third of our total export market for tobacco.

Fruit—Both Great Britain and France have barred imports of apples and pears from this country. Exports of other fruits have also declined.

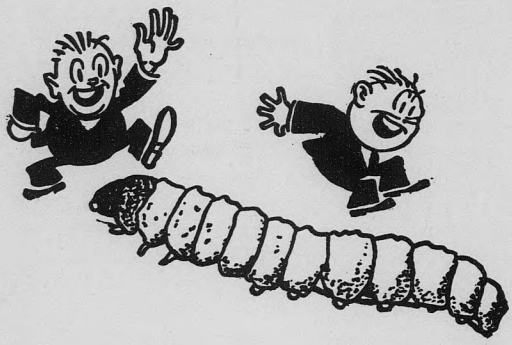
To sum up: Although war has stimulated exports of industrial products, and this gives support to the *domestic* demand for farm products, war has shut off a large part of our *export* market for farm products."

How Fruits Compare in Food Value

Summarized by W. B. Ward from data assembled in the Bureau of Home Economics, U. S. Department of Agriculture

Edible Portion	*Protein (percent)*	*Total carbohydrate (percent)*	*Fuel value per pound (calories)*
Apples, fresh	0.3	14.9	290
Apricots, fresh	1.0	12.9	255
Apricots, dried	5.2	3.2	1,325
Bananas	1.2	23.0	445
Blackberries (or dewberries)	1.2	11.9	285
Blueberries (or huckleberries)	.6	15.1	310
Cherries	1.1	14.8	310
Cranberries	.4	11.3	240
Currants, fresh	1.6	12.7	275
Dates	2.2	75.4	1,430
Figs, dried	4.0	68.4	1,365
Gooseberries	.8	10.1	215
Grapefruit	.5	10.1	200
Grapes	1.0	15.8	335-355
Lemons	.9	8.7	200
Melons—Muskmelons	.6	5.9	125
Melons—Watermelons	.5	6.9	140
Oranges	.9	11.2	230
Peaches, fresh	.5	12.0	230
Peaches, dried	3.0	69.4	1,340
Pears, fresh	.7	15.8	315
Pineapples	.4	13.7	265
Plums, fresh (excluding prunes)	.7	12.9	255
Prunes, dried	2.3	71.0	1,355
Raisins (includ. so-called dried currants)	2.3	71.2	1,355
Raspberries	1.3	15.0	305-375
Strawberries	.8	8.1	185
Tangerines	.8	10.9	225

Have you read the advertisments?



Get the JUMP on the Codling Moth

with D-X and Arsenate of Lead

Perhaps you may think you have been getting more than your share of codling moth. But, in sections where codling moth is severe, there are orchards where as many as 15 applications of arsenate of lead, with the most modern equipment, failed to control 50% of the moths. Therefore increased doses of arsenate of lead is not the answer.

However, the addition of a very small amount of D-X (1 to 600) to the arsenate of lead does three important things. First, the arsenate of lead is impregnated with pyrethrum and rotenone, giving it toxicity it did not have before. Immediate paralysis takes place when the codling moth comes in contact with the D-X combination or takes it in his mouth. Secondly, the coating and buildup of the arsenate of lead is increased. Thirdly, many live moths in the trees are killed by contact.

Therefore in your early codling moth sprays (calyx and early cover) add 1 pint of D-X to each 100 gallons of your regular combination. Then at the peak of the first brood use 1½ pints of D-X with arsenate of lead. Later applications will depend on whether you have washing equipment or not.

D-X has many valuable uses in the orchard. Write for new literature containing full directions and experience of other growers. Address Department "F".

B. G. Pratt Company

50 CHURCH STREET **NEW YORK, N. Y.**